

Remarks

Upon entry of the foregoing amendment, claims 1-19, and 21-33 are pending in the application, with claims 1, 15, and 27 being the independent claims. Claims 1, 15, and 27 are amended herein to clarify the invention. These amendments are generally supported by paragraphs [0010], [0037], and FIG.4, and related discussions. Based on the following remarks, Applicants respectfully request that the Examiner reconsider all outstanding objections and rejections, and that they be withdrawn.

Rejection Under 35 U.S.C. § 103

Claims 1-12, 14-19, 21, 22, 25, and 26 are rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 6,954,625 to Crowley (hereinafter "Crowley") in view of U.S. Patent No. 5,822,687 to Bickley (hereinafter "Bickley"). Applicants respectfully traverse this rejection.

Claim 1 has been amended to clarify the invention, to include the features of:

leaking said first local oscillator signal from an LO port of said first mixer to an IF port of said first mixer that is coupled to an input port of said bandpass filter...

(See, claim1, emphasis added)

The Office Action admits that Crowley does not teach all the features of LO injection that are recited in the claimed invention, and relies on Bickley to allegedly provide the missing features. Upon analysis of Bickley, it is clear that Bickley relies on *LO-to-RF port* leakage through mixer 18, in order to inject the signal F_S into the *output* of filter 16. (See, Bickley, FIG. 1, port 38 of mixer 18 is the RF port) Whereas Applicant's claim 1 has been amended to recite the step of *leaking said first local oscillator signal from an LO port of said first mixer to an IF port of said mixer to an*

input port of said bandpass filter. (See, claim 1). In other words, Applicant's claim 1 utilizes *LO-to-IF leakage* to inject the LO signal into the filter input. Whereas, Bickley uses *LO-to RF leakage*. Bickley does not, and cannot perform Applicant's recited step, because the LO-to-IF path in Bickley is ***not connected to filter 16***, but instead is connected to the IF output 32. (See, Bickley FIG.1) Accordingly, the combination of Crowley and Bickley does not teach or suggest each and every feature of Applicant's claim 1, and therefore does not meet the requirements of *prima facie* obviousness. (See, MPEP 2143A)

Based on the discussion above, Applicants request that the rejection under 35 § U.S.C. 103 of claim 1 be reconsidered and withdrawn, and that claim 1 be passed to allowance. Claims 2-14 depend directly or indirectly from claim 1, and therefore are patentable for being dependent on an allowable base claim, in addition to their own patentable features.

Independent claims 15 and 27 have been amended in a manner similar to that discussed above for claim 1. Therefore, these independent claims are allowable over the combination of Crowley and Bickley for the same reasons as mentioned above for claim 1. Accordingly, Applicants request that the rejection of claims 15 and 27 be reconsidered and withdrawn, and that these claims be passed to allowance. Further, claims 16-29 and 21-26 depend from claim 15, and claims 28-33 depend from claim 27. Accordingly, these claims are allowable for being dependent on an allowable base claim, in addition to their own patentable features.

Claims 13, 23, and 24 were rejected under 35 U.S.C. 103(a) as being unpatentable over Cowley in view of Bickley and in view of U.S. Patent No. 6,591,091 to Vorenkamp et al. (hereinafter "Vorenkamp"). Applicants traverse below.

As discussed above, the combination of Cowley in view of Bickley does not teach each and every feature of Applicant's claimed invention, and does not meet the requirements of *prima facie* obviousness. Vorenkamp does not supply the missing teachings, nor does the Office Action suggest this. Accordingly, Applicants request that the rejection of claims 13, 23, and 24 under 35 U.S.C. § 103 be reconsidered and removed and that these claims be passed to allowance.

Claims 27-30, and 32 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Cowley in view of Bickley, and further in view of U.S. Patent No. 6,678,012 to Belotsterkovsky (hereinafter "Belotsterkovsky"). Applicants traverse below.

As discussed above, the combination of Cowley in view of Bickley does not teach each and every feature of Applicant's claimed invention, and does not meet the requirements of *prima facie* obviousness. Belotsterkovsky does not supply the missing teachings, nor does the Office Action suggest this. Accordingly, Applicants request that the rejection of claims 27-30, and 32 under 35 U.S.C. § 103 be reconsidered and removed and that these claims be passed to allowance.

Claims 31 and 33 were rejected under 35 U.S.C. 103(a) as being unpatentable over Cowley (U.S. 6,954,625) in view of Bickley in view of Belotsterkovsky and in view of Vorenkamp. Applicants traverse below.

As discussed above, the combination of Cowley in view of Bickley does not teach each and every feature of Applicant's claimed invention, and does not meet the requirements of *prima facie* obviousness. Vorenkamp and Belotsterkovsky do not supply the missing teachings, nor does the Office Action suggest this. Accordingly,

Applicants request that the rejection of claims 31 and 33 under 35 U.S.C. § 103 be reconsidered and removed and that these claims be passed to allowance.

Conclusion

All of the stated grounds of rejection have been properly traversed, accommodated, or rendered moot. Applicants therefore respectfully request that the Examiner reconsider all presently outstanding objections and rejections and that they be withdrawn. Applicants believe that a full and complete reply has been made to the outstanding Office Action and, as such, the present application is in condition for allowance. If the Examiner believes, for any reason, that personal communication will expedite prosecution of this application, the Examiner is invited to telephone the undersigned at the number provided.

Prompt and favorable consideration of this Amendment and Reply is respectfully requested.

Respectfully submitted,

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